

**EXHIBIT D**

## Pacific Fatigue Laboratory

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August 16, 2011

Jason A. Newfield, Esq.,  
585 Stewart Avenue, Suite 312  
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Dear Mr. Newfield

Please accept the following as my carefully considered professional opinion regarding the cardiopulmonary exercise tests performed by Betsy Keller, Ph.D. at Ithaca College on Carol Martucci and the comments subsequently provided regarding the outcome of that testing. I can attest to the truth of the following statements and would testify to this in court, under oath, if called to do so.

Firstly, my assessment of Dr. Keller's qualifications to perform and interpret a cardiopulmonary exercise test: I know Dr. Keller personally and am familiar with her work. She is a well-respected Professor of exercise physiology (not philosophy as noted in the response), scientist and chronic fatigue syndrome researcher. The American Heart Association do not require that cardiopulmonary exercise tests be performed by a physician, indeed in a recent publication they note that such testing has long been used in athletic and research settings.<sup>1</sup> I am also familiar with the testing protocol used by Dr. Keller. It is identical to the protocols used in our own Pacific Fatigue Laboratory and follows guidelines published by the American College of Sports Medicine and endorsed by the American Heart Association.

As for the test results, the patient gave good effort on both tests with no indication of malingering. While effort was good, it may not reflect a cardiovascular maximum. I will therefore limit my interpretation of the tests to those values obtained at the ventilatory or anaerobic threshold (V/AT). This is the point at which anaerobic metabolism increases in working muscles as aerobic metabolic capacity can no longer meet physiologic demands. V/AT constitutes a reliable, reproducible index of sub maximal exercise intensity that is more consistent with a patient's ability to perform daily activities. Working at intensities above V/AT eventually results in fatigue.

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The response to Dr. Keller's report is incorrect when it states that "sedentary functions" require little or no aerobic activity. As stated in the report, most activities of daily living (reading, walking at a normal pace, computer use, office-type work, etc.) are aerobic in nature and healthy individuals are able to perform such activities for prolonged periods of time with no meaningful physical fatigue. If V/AT occurs at low oxygen consumption, normal daily activities may exceed the energy demands that can be met through aerobic metabolism, thus requiring anaerobic metabolism to provide energy. This results in early onset fatigue and prolonged recovery.

Ms. Martucci's oxygen consumption at the V/AT was between 4.2 and 9.4 ml/kg<sup>1</sup> min<sup>-1</sup>. This is not in "the range of most healthy subjects" as argued in the response, but meets accepted criteria for moderate to severe impairment (i.e., 5-11 ml/kg<sup>1</sup> min<sup>-1</sup>).<sup>3,5</sup> I assume that the person writing the response was confused because V/AT as a % of peak oxygen consumption was in the typical range. In Ms. Martucci's case both oxygen consumption at peak exercise and oxygen consumption at the V/AT were abnormally low. The exercise test results show that many normal activities of daily living would severely tax Ms. Martucci's capacity to produce energy aerobically. Walking at only 3 mph exceeds her anaerobic threshold and is likely to precipitate the onset/exacerbation of symptoms, including excessive fatigue. This is both a demonstration of physical impairment and a quantifiable limitation of Ms. Martucci's ability to function in a work environment.

Sincerely,



Christopher R. Snell, Ph.D.

### *References*

1. *Wang et al. (2010). Clinical's study of electroconvulsive therapy in adults: A systematic review of the literature. American Journal of Psychiatry.* <http://aj.psychiatry.com/aj/article.aspx?doi=10.1097/01011912-201007000-00010>
2. *Carroll et al. and Anderson et al. (2001). Effects of the frequency of treatment, duration, and change in clinical response.*
3. *Wang et al. (2010). Electroconvulsive therapy versus the efficacy of chronic medical therapy. Am J Psychiatry 167:111-118.*

### *References*

1. Balady et al. (2010). Clinician's Guide to Cardiopulmonary Exercise Testing in Adults: A Scientific Statement From the American Heart Association. <http://circ.ahajournals.org/cgi/content/full/122/2/191>
2. Cocchiarella L and Anderson BJ (2001). *Guides to the Evaluation of Permanent Impairment*, 5th Ed. Chicago: American Medical Association.
3. Weber K, and Janicki JS (1985). Cardiopulmonary exercise testing for evaluation of chronic cardiac failure. *Am J Cardiol* 55:22A-31A.